DOCUMENT RESUME

ED 083 492 CG 008 323

AUTHOR Nydegger, Rudy V.
TITLE Leadership in Small Groups: A Reward-Cost Analysis.
PUB DATE 70
NOTE 22p.

EDRS PRICE MF-$0.65 HC-$3.29
DESCRIPTORS Behavior Change; *Cost Effectiveness; Cues; Experimental Groups; Group Dynamics; *Leadership; Punishment; Reinforcement; *Rewards; *Social Exchange Theory; *Verbal Operant Conditioning

ABSTRACT

By utilizing reinforcing and punishing light cues the verbal output and leadership status of Target Ss in a four-person group was manipulated. There were three conditions: Control (no light cues used); Agree, where Non-Target Ss were reinforced for agreeing with the Target, and punished for all other verbalizations; and Disagree, where Non-Target Ss were reinforced for disagreeing with the Target and punished for all other verbalizations. From social exchange theory it was predicted that both experimental groups would show significant increases on the dependent measures over trials and in comparison with a control group, but the Disagree group would not show the same effect on the leadership rankings. In general, the results supported the notion that one leadership function is the maximization of the rewards/costs ratio, and the group will rank members in the order of their ability to fulfill this function. (Author)

FILMED FROM BEST AVAILABLE COPY

ED 083492

CG 008 323

LEADERSHIP IN SMALL GROUPS:

A REWARDS-COSTS ANALYSIS

Rudy V. Nydegger

Rice University

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

Mailing Address:

Rudy V. Nydegger

Department of Psychology

Rice University

Houston, Texas 77001

LEADERSHIP IN SMALL GROUPS:

A REWARDS-COSTS ANALYSIS

Rudy V. Nydegger

Rice University

Abstract

By utilizing reinforcing and punishing light cues the verbal output and leadership status of Target Ss in a four-person group was manipulated. There were three conditions: Control (no light cues used); Agree, where Non-Target Ss were reinforced for agreeing with the Target, and punished for all other verbalizations; and Disagree, where Non-Target Ss were reinforced for disagreeing with the Target and punished for all other verbalizations. From social exchange theory it was predicted that both experimental groups would show significant increases on the dependent measures over trials and in comparison with a control group, but the Disagree group would not show the same effect on the leadership rankings. In general, the results supported the notion that one leadership function is the maximization of the rewards/costs ratio, and the group will rank order members in the order of their ability to fulfill this function.

LEADERSHIP IN SMALL GROUPS:

A REWARDS-COSTS ANALYSIS

Rudy V. Nydegger

Rice University

The purpose of this study was to evaluate the efficacy of the differential application of reinforcing and punishing light cues in the manipulation of verbal behavior and leadership status in small groups. As Bachrach, et al. (1961) point out, the same variables that apply to verbal conditioning in the individual case also apply in the group situation. In fact, many studies have used this approach quite fruitfully. By using reinforcement contingencies Shapiro and his co-workers have been able to manipulate social responses, the order of speakers in a conversation, and decision making activity (Shapiro & Morningstar, 1963; Shapiro, 1963; Levin & Shapiro, 1962; and Leiderman & Shapiro, 1963). Walker and Heyns (1962) found that groups could be made to appear as "individualists" or "conformists" through subtle differential reinforcement of these types of behaviors. McNair (1957) showed that the rate of verbalization in a group setting was influenced by reinforcers, and varied as a function of the schedule of reinforcement. Finally, Cieutat (1959) found that the amount of time a S spoke in a seminar was related to the attention given him by the E.

An interesting development in the study of group reinforcement came from Oakes, et al. (1960) who found that the content of group discussion and amount of participation could manipulated by the administration of reinforcing and/or punishing light cues. Oakes

(1962) also found that the meanings given the various light cues had significant effects on the subsequent performance of the Ss.

Group reinforcement work also has important implications for the study of leadership. A number of investigators (Bass, 1949; Borgatta & Bales, 1966; Kirscht, et al., 1960) have reported close relationships between ratings of leadership and the amount of participation by the individual. On a common sense basis the assumption might be made that a person participates more because he "has" leadership. It is just as logical, however, to assume that he is considered more of a leader because he participates more.

In order to further examine the relationship between leadership and verbal output, Hastorf (1966) modified Oakes' procedure. In his study the Ss discussed a case history without reinforcement, and then ranked the four group members (including themselves) on a sociometric questionnaire designed to reveal perceived leadership status. The E then summed the group's rankings, and the person ranked third overall was designated "Target Person." This was, of course, done without the knowledge of any of the Ss. The group then discussed a second case, with the Target Person receiving positive light cues (green) for verbalization and negative cues (red) for non-participation. The three Non-Target Ss received green lights when they agreed with the Target S and red lights for any other verbalization. Following the discussion the Ss again ranked the group members on leadership. This was followed by a third discussion (an extinction trial) during which no light cues were used, and finally, another presentation of the questionnaire.

As would be expected on the basis of previous studies, Hastorf found that the proportion of verbalization attributable to the Target Person increased significantly during the reinforcement session and declined only slightly during the extinction trial. In addition, the leadership status of the Target Person, as perceived by the Non-Target Ss, also increased significantly after the reinforcement session with only a slight decline following the extinction session.

Oakes (1968) has criticized Hastorf's (1966) use of the sociometric questionnaire. First, Oakes disagreed somewhat with the content of Hastorf's questionnaire, and discussed how this might have accounted for some of the reinforcement effect. In order to clarify this issue Zdep and Oakes (1967) designed a replication of Hastorf's study in which the questionnaire was eliminated for half of the groups. The results indicated that the reinforcing-punishing light cues exerted a significant effect on the Target Person's proportion of talking time and his leadership status as perceived by other group members whether or not an initial questionnaire was used. Nydegger and Grice (1967) have obtained much the same findings.

The effect of reinforcement on participation and leadership status, then, has been shown to be reliable and not dependent on sensitization by a questionnaire. In fact, Nydegger (1970) obtained similar results in shorter sessions when reinforcing lights were applied only to the Target Person and other group members were not aware of the light cues. This technique seems to produce quite

stable effects over time. David (1967) found that not only did the effects of the light cues persist over time, but all Ss and not just the Target Ss seemed to participate more just by virtue of having been in the group before.

On the basis of the data from these studies it can be fairly reliably stated that there is a positive relationship between verbal output and leadership status, but the functional nature of this relationship is still a bit in question. Not many people would agree that simply talking a lot, without regard for the content, makes a leader. Assuming this notion to be true, the present study addresses itself to the issue of how verbal output may be functionally related to emergent leadership in small groups.

This approach is much in line with changing orientations to the study of leaders and leadership. In an excellent review, Hollander (1964) notes this change, and points out how the field is now gone beyond studying leaders per se, and is approaching leadership in terms of the relationships between the leader, other members, and the situations in which the group is found. Fiedler (1958, 1967) typifies this new approach by focusing on how leaders and followers interact given the constraints of certain situational variables. Bavelas (1965) really updates the "man vs. situation" question by stressing that functions to be fulfilled by leaders are essential elements of the situation in which the leader finds himself. Thus, the importnat issue is not who the leader is, but rather, how the leadership functions are distributed.

There are apparently many leadership functions that depend upon task and other situational demands as well as psychological

needs of the members. The present writer feels that the person who increases positive outcomes or states of the world, and decreases the negative ones is fulfilling one important function for the group. This is of course necessarily relevant to the salient needs of the group at any given time. This notion is much like Thibaut and Kelley's (1959) rewards-costs analysis of social behavior, and borrows much from their thinking. In fact they mention (Thibaut & Kelley, 1959) that a person ranked high sociometrically is one who increases rewards and decreases costs for the persons who rank him.

By looking at the group leader in this fashion we note some possible confounding in Hastorf's (1966) study that was mentioned above. Since Non-Target Ss were only reinforced when they agreed with the Target Person, and were punished for other verbalizations we must ask why the Target Ss increased in leadership status following the light cues. Was it because he talked more, or was it perhaps because he was able to provide rewards for the other group members. The present study was devised to answer this question directly.

To do this the Oakes-type situation was used, and the experiment was conducted much the same as was Hastorf's (1966) and Nydegger and Grice's (1967). The main difference was the inclusion of an additional experimental group in which the Non-Target Ss were rewarded for disagreeing with the Target S and punished for agreeing.

The hypotheses to be tested were:

1. When compared with the Control group both experimental

groups would show a significant difference in the second and third trials (after the light cues) on all dependent measures.

2. On verbal output both of the experimental groups would evidence an increase in duration and frequency from the first to second trial, and this difference would persist to the third trial. The control group would show no such change.

3. On leadership ranking the Agree group would show a conditioning effect from first to second trials, and from first to third trials. No such difference would be found in Control or Disagree groups.

4. In the second and third trials the Target Ss in the Agree condition would be ranked significantly higher sociometrically than those in the Disagree and Control conditions.

Method

Subjects. The Ss in this study were 96 male volunteers recruited from an introductory psychology course of about 500 students. Each S was assigned randomly of one of eight four-person groups in each of three conditions. The only difference in this assignment procedure was that a restriction prohibiting personal friends from serving in the same group.

Apparatus. The group members were randomly assigned to one of four seats around a square table. In front of each chair on the table was a light box consisting of one-half inch red, green, and amber lights, and a black flaired hood to keep Ss from seeing one another's cues. There was also a microphone which was connected to headsets worn by two Es in an adjacent control room where the

discussions were monitored. In the control room were the control panels for the light boxes, elapsed timers and frequency counters for recording verbal output. A full description of all equipment may be found in Nydegger (1970).

All instructions and discussion topics were presented to the Ss in manilla folders that were numbered for each discussion. The topics discussed were:

1. "How can we insure individual rights and safety in large cities without having to resort to 'police state' tactics and controls?"
2. "How would you design a more meaningful educational experience for the college undergraduate?"
3. "How would you develop a self-policing, self-maintaining penitentiary?"

The order of presentation of these questions was counterbalanced for all groups.

Procedure. In the present study the three experimental conditions represented the light cue contingencies that were used. In the control group no lights were used in any trial and the Ss participated in three ten-minute discussions. The Agree condition was essentially a replication of Hastorf's (1966) and Nydegger and Grice's (1967) studies in that light cues were used in only the second of the discussions. Instructions for this session stated that the Es were studying the effects of feedback on group discussion; therefore during the discussion the Es would provide feedback. The Ss were told that particularly insightful comments and responses that furthered the group's progress would result in a green light;

getting off the track, or hampering the group's progress would occasion a red light. In all sessions the amber light was used to start and stop the discussion.

After the first trial (OPI; or Operant I) the Ss were given a short questionnaire with the following items:

1. Who would you say talked the most?
2. Who did the most to guide group discussion?
3. Who had the best idea?
4. Who was the group leader?

They were told to rank all four participants including themselves on each item. Then the Es determined the S ranked third on verbal output and leadership ranking and he was designated as the Target Person. During the second trial (ACQ; or Acquisition) the Target was given green lights for verbalizing, and red lights for remaining silent. The other Ss were given green lights for agreeing with the Target, and red lights for all other verbalizations. The third trial (OPII; or Operant II) was essentially the same as the first since no light cues were used. The leadership questionnaire was given following ACQ and OPII trials, and the only procedural departure from the earlier studies was that Hastorf (1966) and Nydegger and Grice (1967) used 10-minute trials for OPI and OPII, and 20 minutes for ACQ. The present study employed three ten-minute trials because Nydegger (1970) found that 10 minutes was a sufficient amount of time to elicit stable changes in performance using this paradigm.

The third condition (Disagree) was essentially identical to the second except that the Non-Target Ss were reinforced (green

light) for disagreeing with the T rget, and punished (red lights) for all other verbalizations. The control group did not receive any light cues, and were simply told that the lights were used to start and stop the discussions.

In summary, the procedure was:

1. Ss escorted in, seated around the table, given general instructions, and were presented the discussion topic.
2. Ss talked for ten minutes during which time Es recorded frequency and duration of talking for all Ss.
3. The discussion was stopped and the leadership questionnaire was administered.
4. The light cue instructions were given to all Ss in the experimental conditions, the discussion topic was presented, and the discussion ensued.
5. The discussion was stopped, and the leadership questionnaire was administered.
6. The third topic was introduced and the discussion commenced, following which the leadership questionnaire was readministered.
7. The Ss were thanked, debriefed, and dismissed.
8. Frequency and duration of talking were recorded for all Ss in all trials.

For further information regarding equipment, specific instruction, discussion topics, or other fine points of methodology, please see Nydegger (1970).

Results

The results were analyzed in terms of both between-group and within-group comparisons. For the between-group comparisons the

Mann-Whitmey U with correction for ties was employed with $\alpha = .05$. For changes over trials the sign test was used also with $\alpha = .05$.

I. Between Group Comparisons

A. Agree vs. Control. As predicted there were no differences between these two groups on any dependent measure during the OPI trial. Following the ACQ trial, however, the Agree group was ranked significantly higher than the Control on all measures: frequency of talking ($U = 8.5$; $p < .006$); duration of talking ($U = 6$; $p < .002$); and leadership rank ($U = 11$; $p < .011$). These differences held up, and were still in evidence following the OPII trial: frequency ($U = 9.5$; $p < .008$); duration ($U = 12$; $p < .012$); leadership ($U = 7$; $p < .003$).

B. Disagree vs. Control. Again as predicted there were no differences between these two groups during the OPI trial. However, following the ACQ trial differences were found. There was no significant difference in terms of frequency of talking, even on this trial, but the Disagree group was ranked significantly higher than the Control group on duration of talking ($U = 6$; $p < .002$), and on leadership ($U = 9.5$; $p < .008$). This finding was duplicated following OPII. There was no difference in frequency of talking, but there were significant differences in duration ($U = 8$; $p < .005$), and leadership ($U = 11.5$; $p < .017$).

C. Agree vs. Disagree. There were no differences between these two groups in either the OPI of ACQ trials although it was expected they would differ in the ACQ trial. However, as predicted, on the OPII trial the Agree Target Ss were ranked higher on leadership ($U = 16.5$; $p < .04$). There were no ther differences in the OPII

trial.

II. Within-group Changes Over Trials

A. OPI to ACQ changes. The control group did not show changes on any dependent measure over these two trials. The Agree group did not show statistically significant changes although the trends were certainly in the predicted direction on frequency ($p < .06$) and duration ($p < .11$). The Disagree group showed no changed in leadership, but there was a difference in duration ($p < .03$). Further, there was a marked trend in frequency ($p < .06$).

B. OPI to OPI' Changes. Again the Control group showed no changes on any dependent measure from the first to the third trial. However, in the Agree condition there was a significant increase in duration of talking ($p < .02$) and in leadership ranking ($p < .05$). There was no difference in frequency. In the Disagree group there was no change in frequency or leadership, but there was an increase in duration ($p < .02$).

Discussion

In general, the hypotheses tested in this study were partly substantiated. However, it was noted that in several tests the frequency measure was not as sensitive in detecting changes and differences as was the duration measure. This is not the least bit surprising, as frequency of verbalization is at least somewhat difficult to interpret (e.g. is a one minute verbalization the same as a five second one? Or better, what is a verbal response?). In terms of measuring verbal output in this type of situation, the duration measure is probably the most meaningful.

In the OPI - ACQ changes the experimental groups did not show

the magnitude of change that was expected. In fact, the Agree condition only showed trends on two measures: frequency and duration; and the Disagree group only showed significant change in duration with a trend in frequency. However, in the OPI - OPII comparisons the Agree group changed significantly on duration and leadership and the Disagree group changed on duration. It may well be that the ten minute ACQ trial is not enough time to effect the changes. In an earlier study Nydegger (1970) found ten minutes to be satisfactory, but that situation was a bit different since the light cue contingencies did not depend upon such subtle differentiation. This finding probably indicates that the 20 minute ACQ trial as used by Hastorf (1966) is the best length of time for this type of study.

Why then would the OPI - OPII changes be significant when the OPI - ACQ changes were not? It may well be that given the subtle nature of the manipulation it simply takes a bit longer for Ss to incorporate and process the light cue information in such a way as to affect performance and resultant leadership ranking. The fact that the difference did emerge makes a strong case for this idea, and also suggests that the 20 minute ACQ trial is desirable in situations where such subtle manipulations are used.

Perhaps the most significant aspect of the present study was the evidence of difference between the Agree and Disagree groups with respect to leadership. The Agree group showed a significant increase in leadership ranking from OPI - OPII (although not from OPI - ACQ); the Disagree group showed no such change. Also, in comparing the Agree and Disagree groups on all measures on all trials, the only significant difference between the two was on

leadership ranking following the PII trial. That is, the Ss ranked the Agree Targets higher than the Disagree Targets. This lends at least tentative support to the notion that one function of a group leader is to provide for the maximization of rewards and the minimization of costs for group members. Thus, it seems reasonable that in the analysis of at least some leadership functions, a social exchange theory paradigm provides a good theoretical base.

This manipulation of leadership points out nicely that in many instances it is not who the leader is, but rather what he does to meet certain needs of the group that is significant. As Bavelas, et al. (1965) assert, the old "trait" approach to leadership has had difficulties, and a situational one seems far more viable. It also supports the notion that situations can be manipulated in such a way as to maximize the leadership capabilities of many people who might not fit the stereotypic image of leader. Thus, from a social exchange standpoint, the person in the role of leader is the one who fulfills expectations, achieves goals, and provides rewards for other members. In exchange, he receives influence, status, and esteem (Hollander & Julian, 1969). While many other studies have demonstrated the effectiveness of light cues in changing verbal output and leadership status (Oakes, et al., 1960; Oakes, 1962a; Oakes, 1962b; Oakes et al., 1961; Wong, 1962; Hastorf, 1966; Zdep & Oakes, 1967; David, 1967; Bavelas, et al., 1965; Nydegger & Grice, 1967; Nydegger, 1970) the present study lends even more support for the notion that social exchange theory provides a viable model for the study of leadership.

At this point the question of how the light cues worked must be raised. Did the light cues reinforce or punish verbal behavior, or did they effect changes in behavior because they provided, as Orne (1962) suggests, demand characteristics in the situation? The latter position would assert that Ss in research are in a problem solving situation in which they are supposed to "figure out" what to do, and the experimenter provides cues that are designed to elicit predicted behavior. The "good" S solves the riddle and confirms the E's expectations. This writer feels that to understand verbal conditioning in general, and the group reinforcement technique in particular reinforcement must be decomposed into what Estes (1967) calls "informational" and "motivational" components. In this situation the informational aspect is probably far more important than the motivational. In this sense the light cues can serve to provide the S with information about his performance that may change his perception of himself in such a way as to elicit changes in behavior that bring his behavior in line with his new perception of the state of the world. This effect can be highly situational with few enduring qualities. In fact, the generalization probably depends heavily upon replication of this information in other varied situations.

In the present study the Target Ss in the experimental groups were elevated in relation to other group members on leadership and verbal output by virtue of reinforcing and punishing light cues. Since the groups that were reinforced for agreeing with the Target elevated him more in terms of leadership than the group reinforced for disagreeing with the Target, some interesting conclusions can be suggested. First, a Target S in this type of situation probably

talks more after the use of reinforcing light cues because the new information regarding his behavior prompts him to re-evaluate himself, form a new opinion, and then change his behavior to conform with his new picture of himself. The other group members probably talk less for the same reasons. The changes in leadership status appear to come from two sources. First, one common assumption about a group leader is that he talks more than others. Thus, when a member changes his behavior, the perception the other group members have of him will change so that there is congruity between his behavior and their perception of him. Interestingly, Nydegger (1970) found that by analyzing Target and Non-Target rankings separately, they were parallel in all conditions. The other group members appear quite sensitive to changes in the behavior of a member, and will revalue him to meet this perceived change.

The present study provides the second link in the understanding of change in leadership status in the group reinforcement setting. The leader appears to function in some way to maintain a favorable balance between rewards and costs. When you are rewarded for agreeing with the leader you rank him higher than if you are rewarded for disagreeing with him, and punished for agreeing. This is in the absence of any difference in verbal output.

In summary, this study provides additional support for the social exchange approach to the study of leadership. It is not suggested or pretended that other variables are not involved, for as we study group processes further, we find that something as superficially obvious as leadership is enormously complex. However, in the present situation the model offered and tested appears to satisfactorily explain the results.

References

Bachrach, A. J., Candland, D. K., & Gibson, J. T. Group reinforcement of individual response experiments in verbal behavior. In T. A. Berg & B. M. Bass (Eds.), Conformity and Deviation. New York: Harper & Row, 1961.

Bass, B. An analysis of the leaderless group discussion. Journal of Applied Psychology, 1949, 33, 527-530.

Bavelas, A. Engineer to job to fit the manager. Harvard Business Review, 1965, 43, 115-122.

Bavelas, A., Hastorf, A. H., Gross, A. E., & Kite, W. R. Experiments on the alteration of group structure. Journal of Experimental Social Psychology, 1965, 1, 55-70.

Borgatta, E., & Bales, R. F. Sociometric status pattern and characteristics of interaction. Journal of Social Psychology, 1956 43, 289-297.

Cieutat, V. J. Superstitions modifications of verbal behavior during class discussion. Psychological Reports, 1959, 5, 658.

David, K. H. Generalization of operant conditioning of verbal frequency in three-men discussion groups. Unpublished Ph. D. dissertation, University of Hawaii, 1967.

Estes, W. K. Reinforcement in human learning. Technical Report No 125, 1967, Stanford University.

Fiedler, F. E. Leader Attitudes and Group Effectiveness. Urbana: University of Illinois Press, 1958.

Fiedler, F. E. A Theory of Leadership Effectiveness. New York: McGraw-Hill, 1967.

Hastorf, A. H. The reinforcement of individual actions in a group situation. In L. Krasner & L. P. Ullmann (Eds.), Research in Behavior Modification. New York: Holt, Rinehart, & Winston, 1966.

Hollander, E. P. Leaders, Groups, and Influence. New York: Oxford University Press, 1964.

Hollander, E. P., & Julian, J. W. Contemporary trends in the analysis of leadership processes. Psychological Bulletin, 1969, 76, 387-397.

Kirscht, V. P., Lodahl, T. M., & Haire, M. Some factors in the selection of leaders by members of small groups. In D. Cartwright & A. Zander (Eds.), Group Dynamics, (2nd ed.). New York: Row, Peterson, & Co., 1960.

Leiderman, P. H., & Shapiro, D. The operant conditioning of conversation. Journal of Experimental Analysis of Behavior, 1962, 5, 309-316.

Levin, G., & Shapiro, D. A physiological and behavioral approach to the study of group interaction. Psychosomatic Medicine, 1962, 25, 146-157.

McNair, D. M. Reinforcement of verbal behavior. Journal of Experimental Psychology, 1957, 53, 40-46.

Nydegger, R. V. Leadership status and verbal behavior in small groups as a function of schedule of reinforcement and level of information processing complexity. Unpublished Ph. D. dissertation, Washington University (St. Louis), 1970.

Nydegger, R. V., & Grice, D. D. The effects of differential reinforcement on leadership in a small group. Unpublished paper, 1967.

Oakes, W. F. Reinforcement of Bales's categories in group discussion. Psychological Reports, 1962, 11, 427-435. (a)

Oakes, W. F. Effectiveness of signal light reinforcers given various meanings on participation in group discussions. Psychological Reports, 1962, 11 469-470. (b)

Oakes, W. F. Reinforcement effects in group discussion. In W. E. Vinacke (Ed.), Readings in General Psychology. New York: American Book Co., 1968.

Oakes, W. F., Droge, A. E., & August, Barbara. Reinforcement effects on participation in group discussion. Psychological Reports, 1960, 7, 503-514.

Oakes, W. F., Droge, A. E., & August, Barbara. Reinforcement effects on conclusion in group discussion. Psychological Reports, 1961, 9, 27-34.

Orne, M. T. On the social psychology of the psychological experiment with particular reference to demand characteristics and their implications. American Psychologist, 1962, 17, 776-782.

Shapiro, D. The reinforcement of disagreement in a small group. Behavior Research and Therapy, 1963, 1, 267-272.

Shapiro, D., & Morningstar, M. Some factors affecting disagreement in a small group. ONR Technical Report 6, Contract NONR-1866 (43) Group Psychology Branch, 1963.

Thibaut, J. W., & Kelley, H. H. The Social Psychology of Groups. New York: Wiley, 1959.

Walker, E. L., & Heyns, R. W. An Anatomy for Conformity. Englewood Cliffs, N. J.: Prentice Hall, 1962.

Wong, J. Effect of reinforcement n attitude toward the physically disabled. Unpublished M. A. thesis, University of Hawaii, 1966.

Zdep, S. M., & Oakes, W. F. Reinforcement of leadership behavior in group discussion. Journal of Experimental Social Psychology, 1967, 3, 310-320.